

CLEAN COPY OF CLAIMS

12. A method for designing a suppression effector and replacement nucleic acid, said method comprising:

- a) determining at least a portion of a nucleotide sequence of a mutant allele;
- b) designing a suppression effector that binds to said portion, thereby to inhibit the expression of the mutant allele; and
- c) designing a replacement nucleic acid which varies from the mutant allele by having one or more degenerate / wobble sites that are altered so that the replacement nucleic acid is not inhibited by the suppression effector,

wherein the replacement nucleic acid encodes a wild-type or non-disease causing protein.

13. A method for designing a suppression effector and replacement nucleic acid, the method comprising:

- a) determining at least a portion of a nucleotide sequence of a mutant allele;
- b) identifying the presence of a ribozyme cleavage site on the mutant allele;
- c) designing a ribozyme that cleaves an RNA encoded by the mutant allele; and
- d) designing a replacement nucleic acid which is not suppressed or is only partially suppressed,

wherein the replacement nucleic acid differs from the mutant allele in at least one degenerate / wobble position of at least one codon and wherein the replacement nucleic acid encodes a wild-type or non-disease causing protein.

14. The method of claim 12, wherein the suppression effector is a nucleic acid or a peptide nucleic acid (PNA).

15. The method of claim 12, wherein the suppression effector is a peptide or an antibody.
- +
16. The method of claim 12, wherein the suppression effector is a nucleic acid that forms a triple helix with the mutant allele.
17. The method of claim 12, wherein the suppression effector is an antisense nucleic acid.
18. The method of claim 12, wherein the suppression effector is a single-stranded RNA.
19. The method of claim 12 or 13, wherein the suppression effector is a ribozyme which cleaves an RNA encoded by the mutant allele.
20. The method of claim 19, wherein the ribozyme cleaves an RNA encoded by the mutant allele at an NUX ribozyme cleavage site.
21. The method of claim 12 or 13, wherein the suppression effector is operatively linked to an expression vector.
22. The method of claim 12 or 13, wherein the suppression effector binds to the mutant allele in one or more sites selected from the group consisting of a coding region, a 5' untranslated region, a 3' untranslated region and an intronic region.

25. The method of claim 12 or 13, wherein the replacement nucleic acid encodes a protein selected from the group consisting of mammalian rhodopsin, collagen 1A1, collagen 1A2 and peripherin.
26. The method of claim 12 or 13, wherein the replacement nucleic acid is operatively linked to an expression vector.
27. The method of claim 21 or 26, wherein the expression vector is a viral expression vector.
30. The kit of claim 44, wherein the suppression effector is a nucleic acid or a peptide nucleic acid (PNA).
31. The kit of claim 44, wherein the suppression effector is a peptide or an antibody.
32. The kit of claim 44, wherein the suppression effector is a nucleic acid that forms a triple helix with the mutant allele.
33. The kit of claim 44, wherein the suppression effector is an antisense nucleic acid.
34. The kit of claim 44, wherein the suppression effector is a single-stranded RNA.
35. The kit of claim 44, wherein the suppression effector is a ribozyme which cleaves an RNA encoded by the mutant allele.

36. The kit of claim 35, wherein the ribozyme cleaves an RNA encoded by the mutant allele at an NUX ribozyme cleavage site.

37. The kit of claim 44 or 45, wherein the suppression effector is operatively linked to an expression vector.

38. The kit of claim 44 or 45, wherein the suppression effector binds to the mutant allele in one or more sites selected from the group consisting of a coding region, a 5' untranslated region, a 3' untranslated region and an intronic region.

41. The kit of claim 44 or 45, wherein the replacement nucleic acid encodes a protein selected from the group consisting of mammalian rhodopsin, collagen 1A1, collagen 1A2 and peripherin.

42. The kit of claim 44 or 45, wherein the replacement nucleic acid is operatively linked to an expression vector.

43. The kit of claim 42, wherein the expression vector is a viral expression vector.

44. A kit comprising:
a suppression effector that suppresses the expression of a mutant allele; and
a replacement nucleic acid which differs from the mutant allele in at least one degenerate / wobble position of at least one codon and wherein the replacement nucleic

45. A kit comprising:

at least one ribozyme that cleaves an RNA encoded by the mutant allele; and
a replacement nucleic acid which is not suppressed or is only partially suppressed,
wherein the replacement nucleic acid differs from the mutant allele in at least one
degenerate / wobble position of at least one codon and wherein the replacement nucleic
acid encodes a wild-type or non-disease causing protein.

46. A ribozyme comprising nucleotides 101 - 137 of SEQ ID NO:4.
47. A ribozyme comprising nucleotides 116 - 153 of SEQ ID NO:14.
48. A ribozyme comprising nucleotides 112 - 148 of SEQ ID NO:15.
49. A ribozyme comprising nucleotides 107 - 141 of SEQ ID NO:18.